

No new matter is added by any of the amendments. As such, their entry by the Examiner is respectfully requested.

Information Disclosure Statement

Applicants note that an supplemental Information Disclosure Statement (DS) was mailed on April 26, 2001. A second supplemental IDS is submitted with this response. Applicants respectfully request that the Examiner consider the references cited in each of these IDS' and return a copy of the initialed PTO1449 form indicating such consideration with the next communication.

Priority

The Office Action has stated that Applicants have not complied with one or more condition for receiving benefit of an earlier filing date under 35 U.S.C. §120 because the first sentence of the specification does not contain a specific reference to the earlier applications. Applicants have amended the specification to add a priority claim. As such, Applicants respectfully request withdrawal of this objection.

Objection to Disclosure

The disclosure has been objected to because Page 638 of the specification is missing. Applicants appreciate the Examiner bringing this to their attention and have enclosed a replacement Page 638. Applicants note that they submitted replacement pages 131 and 132, Table 21 (pages 591-594), and Tables 22-24 (pages 638-652) to the United States Receiving Office on March 19, 1999 along with a Request to Record References to Biological Materials under Rule 13bis. These replacement pages were identical to the originally filed pages except that they contained ATCC numbers, which were not available as of the International filing date.

Applicants respectfully submit that the application as filed was complete and that the March 19, 1999 filing contained all the necessary replacement pages. Applicants have enclosed a copy of the papers filed March 19, 1999 for the Examiner's reference. Applicants further submit that replacement Page 638 enclosed with this Response is an exact duplicate of replacement Page 638 submitted on March 19, 1999. As such, Applicants respectfully request entry of replacement Page 638 into the specification.

Applicants further request that the Examiner verify that the remainder of the replacement pages filed on March 19, 1999 were entered into the specification. Applicants wish to ensure that the proper pages

containing the ATCC deposit numbers are properly in the specification of the application currently being examined.

Sequence Listing

Applicants acknowledge that the computer readable sequence listing has been entered without errors.

Rejection Under 35 U.S.C. §101

Claims 40-66 and 85-102 have been rejected under 35 U.S.C. §101 for the asserted reason that the claimed invention is not supported by either a specific and substantial utility or a well-established utility. The Office Action asserts that the claimed nucleic acids are not supported by a specific asserted utility because the disclosed uses of the nucleic acids as probes for isolation of full length cDNAs or genes, gene mapping, isolation of homologous sequences, detection of gene expression, molecular weight markers, chromosomal markers, and numerous other genetic engineering uses are not specific and are generally applicable to any nucleic acid. The Office Action further claims that the subject nucleic acids are not supported by a substantial utility, stating:

The research contemplated by applicants to characterize potential protein products, especially their biological activities, does not constitute a specific and substantial utility. Identifying and studying the properties of a protein itself or the mechanisms in which the protein is involved does not define a 'real world' context or use. Similarly, the other listed and asserted utilities...are neither substantial nor specific due to being generic in nature and applicable to a myriad of such compounds. Office Action, pages 4-5.

In addition, the Office Action states that neither the specification as filed nor any art of record discloses or suggests any property or activity for the nucleic acid such that another non-asserted utility would be well-established for the compounds. This rejection is traversed as applied and as it may apply to the presently pending claims.

The Office Action has noted that SEQ ID NOS: 65, 253, 1780, 1899, and 2007 have a disclosed specific utility as a diagnostic since the specification establishes that they are differentially expressed in cancer cells. Applicants have attached herewith a Declaration under 37 C.F.R. § 1.132 by Dr. Randazzo and Dr. Lamson providing evidence or further evidence that SEQ ID NOS: 739, 1899, and 2007 also represent genes differentially expressed in cancer cells (see Exhibit 1). Therefore, it follows that SEQ ID NOS: 65, 253, 739, 1780, 1899, and 2007 also have a specific utility as a diagnostic.

In short -- and to summarize in a simplified manner-- each of the claimed polynucleotides correspond to a gene that is expressed in a cancerous cell, since all the claimed polynucleotides were isolated a cDNA library of mRNA isolated from a human colon cancer cell line Km12L4-A (see specification, Example 1). In addition, several of the claimed polynucleotides represent a gene that is differentially in cancerous and normal cells. In view of this, one of ordinary skill in the art would recognize that the claimed polynucleotides have utility as required by 35 U.S.C. §101.

As such, Applicants respectfully request that this rejection of claims 40-66 and 85-102 under 35 U.S.C. §101 be withdrawn.

Rejection Under 35 U.S.C. §112, first paragraph

Claims 40-66 and 85-102 have also been rejected under 35 U.S.C. §112, first paragraph, because one would not know how to use an invention that is not supported by either a specific and substantial utility or a well-established utility. This rejection is traversed as applied and as it may apply to the presently pending claims.

As discussed above, each of the claimed polynucleotides correspond to a gene that is differentially expressed in cancer cells and have a specific utility as, for example, a diagnostic. One skilled in the art would know how to use the claimed differentially expressed sequences as diagnostics. As such, this rejection of claims under 35 U.S.C. §112, first paragraph, may be withdrawn.

Claims 25, 34, 43, 52, 61, 70, 79, 88, 97, and 106 have been rejected under 35 U.S.C. § 112, first paragraph as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, the Office Action asserts that the conditions for deposit of the claimed cells do not satisfy the requirements of 37 C.F.R. §1.808 because a statement has not been made that restrictions on availability will be irrevocably removed upon granting of a patent.

Applicants have enclosed a Declaration under 37 C.F.R. § 1.132 with this response that confirms that the deposit requirements recited by the Examiner in the present Office Action have been met (see Exhibit 2). Accordingly, Applicants respectfully request that this rejections of claims 43, 52, 79, 88, and 106 under 35 U.S.C. §112, first paragraph, be withdrawn in view of the accompanying declaration.

Claims 22-111 have been rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Specifically, the Office Action asserts that the specification provides insufficient written description to support the genus of nucleic acid sequences encompassed by the claims, which include full length cDNA, sequences that hybridize to SEQ ID NOS: 65, 253, 329, 739, 1186, 1780, 1899, 1938, 1998, and 2007, sequences from other species, mutated sequences, allelic variants, and splice variants. The Office Action further claims that with the exception of the specific SEQ ID NOS, the skilled artisan cannot envision the detailed chemical structure of the encompassed polynucleotides and/or proteins, regardless of the complexity or simplicity of the method of isolation. This rejection is traversed as applied and as it may apply to the presently pending claims.

The presently pending claims are directed to polynucleotides, cDNAs, recombinant host cells, vectors, polynucleotide sequences of inserts contained in ATCC deposited clones, polypeptides, and cDNAs produced by amplification using a fragment of a specific sequence. The polynucleotide sequences that are the basis for these claims were selected for their differential expression in cancerous cells relative to normal, non-cancerous cells. Applicants submit that one of ordinary skill in the art would recognize that they were in possession of the claimed subject matter at the time the invention was made.

The Office Action cites several cases in support of the assertion that the skilled artisan cannot envision the detailed chemical structure of the encompassed polynucleotides regardless of the complexity or simplicity of the method of isolation, and that an adequate written description requires the nucleic acid sequence itself. It is well established that the adequacy of a written description is judged as of the time of filing of an application.¹ Applicants note that the patents at issue in the cited cases were based on applications filed in the relative dark ages of biotechnology and that there have been many advances since that time.

For example, at issue in Amgen, Inc. v. Chugai Pharmaceutical Co., were U.S. Patent Nos. 4,703,008 and 4,677,195.² The 4,703,008 patent issued from an application filed on November 30, 1984; the 4,677,195 patent issued from an application filed on January 11, 1985. In another case cited by the Office Action, Fiers

¹ Vas-Cath Inc. v. Mahurkar, 935 F. 2d 1555 (Fed. Cir. 1991)

² 927 F. 2d 1200, 1202 (Fed. Cir. 1991)

v. Revel, the disputed patent applications were filed in the late 1970's and early 1980's.³ Furthermore, the disputed patent application in Fiddes v. Baird was filed in 1985 and the disputed patents were based on applications filed in 1985 and 1986. Finally, in University of California v. Eli Lilly and Co. the patents issued from applications filed in the late 1970's.⁴ Clearly, the applications evaluated by the Court were filed many years ago.

Recombinant techniques that are now routine were difficult to carry out at the time of filing of the above applications. For example, the Court in Amgen relies in part on the state of the art in holding that a method for isolating a specific gene did not satisfy the written description for obtaining that gene. The Court stated: "Given the utter lack of experience in probing genomic libraries with fully degenerate probes and the crudeness of the techniques available in 1981, it would have been mere speculation or at most a probable deduction from facts then known...[that this] generalized approach would result in cloning the EPO gene."⁵ However, it is now routine in the art to probe cDNA libraries with hybridization probes to isolate full-length cDNAs and, subsequently, the corresponding gene.

In addition, Applicants have provided two species for each claimed genus of nucleic acids: the specific SEQ ID NO and the ATCC-deposited clone containing that sequence. The courts have long recognized that every species in a genus need not be described in order that a genus meet the written description requirement.⁶ All that is generally required is that Applicants disclose a representative number of species to justify claims to an entire genus.⁷ Here, the two disclosed species for each genus are ample representation of the claimed genus to fulfill the written description requirement.

³ 984 F. 2d 1164, 1167-1168 (Fed. Cir. 1993)

⁴ 30 USPQ 2d 1481 (BPAI 1993); 119 F.3d 1559, 1562-63 (Fed. Cir. 1997), respectively

⁵ 927 F. 2d at 1207.

⁶ See, e.g., Utter v. Haraga, 845 F. 2d 993, 998-99 (Fed. Cir. 1988) ("A specification may, within the meaning of § 112 P1, contain a written description of a broadly claimed invention without describing all species that claim encompasses.")

⁷ Regents of the University of California v. Eli Lilly and Co., 119 F.3d 1559, 1569 (Fed. Cir. 1997) (stating that "A description of a genus of cDNAs may be achieved by means of the recitation of a representative number of cDNAs, defined by nucleotide sequence, falling within the scope of the genus...")

With respect to the scope of claims that can be allowed in view of the present state of the law, Applicants draw the Examiner's attention to U.S. Patent No. 5,861,248 ('248) which was filed on March 29, 1996 and issued on January 19, 1999 (copy enclosed). This patent discloses and broadly claims ESTs for genes that are differentially expressed in human prostate cancers as compared to normal prostate cells. The '248 patent provides partial sequences for the claimed polynucleotides; the issue claims recite "comprising". The court decisions cited by the Office Action were all decided prior to the granting of the '248 patent. The claims of the '248 patent were granted by the Office in light of the same case law to which the present application is subject. Since the Office has held that the Applicants of the '248 patent had possession of their claimed invention, and the scope of the disclosure with respect to the sequence is similar to that provided by the present application, than the Office should again recognize that Applicants of the present invention likewise had possession of their claimed invention at the time of filing and allow claims of similar scope, *i.e.*, allow claims that recite "comprising".

Requiring that Applicants use "consisting of" or "consisting essentially of" transitional language would unfairly limit the scope of Applicants claims. Under this language, a potential infringer could easily avoid infringement by slightly altering the patented gene sequence. Allowing such easy avoidance of infringement contravenes the public policy of the patent laws and the U.S. Constitution "[t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."⁸ By identifying and sequencing polynucleotides that are differentially expressed and disclosing two species of each claimed genus, Applicants are entitled to broader patent protection than such restrictive language would allow.

Finally, Applicants have added product-by-process claims to isolated cDNAs obtained by the process of amplification using a polynucleotide comprising at least a specified number of contiguous nucleotides of one of the disclosed SEQ ID NOS. Amplification of polynucleotides using methods such as PCR are well-known in the art and standard practice for the skilled artisan. In addition, methods of amplifying DNA are disclosed in the specification of the present application at, for example, page 10, line 21 through page 14, line 22. Furthermore, as disclosed in Example 10 of the Revised Interim Written Description Guidelines Training Materials, product-by-process claims have been found to be an acceptable way of claiming a broad genus when there is substantial variation within the genus.⁹

⁸ U.S. Constitution, Article I, § 8, cl. 8

⁹ These training materials were available via the USPTO website as of March 1, 2000;

In sum, the state of the art has advanced to the point that Applicants' disclosure of two representative members of each claimed genus is sufficient for one of ordinary skill in the art to recognize that Applicants were in possession of the claimed invention at the time the application was filed. As such, Applicants respectfully request that this rejection of claims 22-111 under 35 U.S.C. § 112, first paragraph, be withdrawn.

Rejections Under 35 U.S.C. §102(a)

Claims 22-24 have been rejected under 35 U.S.C. §102(a) as being anticipated by GenBank Accession Number AA444267.

This rejection is obviated by cancellation of claims 23 and amendment of claims 22 and 24 to recite the polynucleotide comprises at least 34 contiguous nucleotides of SEQ ID NO:65. GenBank Accession Number AA444267 is identical to SEQ IDNO:65 for only 24 contiguous nucleotides. As such, Applicants respectfully request that this rejection of claims 22-24 under 35 U.S.C. § 102(a) be withdrawn.

Claims 31-33, 40-42, 49-51, 58-60, 67-69, 76-78, 85-87, 94-96, and 103-105 have been rejected under 35 U.S.C. §102(a) as being anticipated by GenBank Accession Numbers W94391, H43467, W66607, AA114761, HSU36478, HSU14990, HSRNAP14K, RRU48288, and U01137, respectively.

These rejections have been obviated by the cancellation of claims 32, 41, 50, 59, 68, 77, 86, 95, and 104 and the amendment to claims 31, 33, 40, 42, 49, 51, 58, 60, 76, 78, 85, 87, 94, 96, 103, and 105 to delete reference to 90% sequence identity and to specify that the claimed nucleic acid molecule comprises at least a specific number of contiguous nucleotides. The claim number, SEQ ID NO, GenBank Accession Number, specific number of contiguous nucleotides claimed, and the number of identical nucleotides of the corresponding GenBank Accession Number are summarized in the following table:

See also Amgen, 927 F.2d at 1206 (stating, "A gene is a chemical compound, albeit a complex one, and it is well established in our law that conception of a chemical compound requires that the inventor be able to define it so as to distinguish it from other materials, and to describe how to obtain it. Conception does not occur unless one has a mental picture of the structure of the chemical, or is able to define it by its method of preparation, its physical or chemical properties, or whatever characteristics sufficiently distinguish it.""); Fiers v. Revel, 984 F.2d at 1169.

Claim Numbers	SEQ ID NO	GenBank Accession Number	Claimed contiguous nucleotides: at least	GenBank contiguous nucleotides
40, 42	329	H43467	250	227
49, 51	739	W66607	35	27
76, 78	1899	HSU14990	100	57
85, 87	1938	HSRNAP14K	100	86
103, 105	2007	U01137	50	44

As the above table shows, each set of claims specifies a longer set of contiguous nucleotides than are identical between each SEQ ID NO and the respective GenBank Accession Number. Thus, the claimed sequences are not anticipated by the above GenBank Accession Numbers. As such, Applicants respectfully request that this rejection under 35 U.S.C. §102(a) be withdrawn.

Rejection Under 35 U.S.C. §103(a)

Claims 26-29, 35-38, 44-47, 53-56, 62-65, 71-74, 80-83, 89-92, 98-101, and 107-110 have been rejected under 35 U.S.C. §103(a) as being unpatentable over GenBank Accession Numbers AA444267, W94391, H43467, W66607, AA114761, HSU36478, HSU14990, HSRNAP14K, RRU48288, and U01137, each in view of Yang et al. The Office Action asserts that it would have been obvious to a person skilled in the art at the time the invention was made to use the nucleic acid sequences of SEQ ID NOS: 65, 253, 329, 739, 1186, 1780, 1899, 1938, 1998, and 2007 as taught in GenBank Accession Numbers AA444267, W94391, H43467, W66607, AA114761, HSU36478, HSU14990, HSRNAP14K, RRU48288, and U01137, respectively, in the yeast two-hybrid assay of Yang et al. and to isolate the encoded proteins of the SEQ ID NOS to test for binding to target proteins *in vitro* as taught by Yang et al. This rejection is traversed as applied and as it may apply to the presently pending claims.

The rejected claims are dependent on, or utilize, the polynucleotide of claims 31, 40, 49, 58, 67, 76, 85, 94, and 105, respectively. As demonstrated above, these claims have been amended such that the claimed sequences are novel over the sequences of the corresponding GenBank Accession Numbers. Yang et al. describes a two-hybrid assay to detect protein-peptide interactions. The method of Yang et al. involves

incorporating nucleotides into plasmids, generating libraries using *E. coli* cells, and expressing the encoded peptides. However, one of skill in the art could not have performed these steps with the claimed polynucleotides because the claimed polynucleotides were unknown before being described by Applicants in the present application.

Thus, the rejected claims are not obvious over the cited GenBank Accession Numbers in view of Yang et al. and this rejection under 35 U.S.C. §103(a) may be withdrawn.

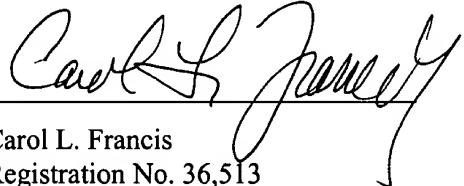
Conclusion

Applicants submit that all of the claims are now in condition for allowance, which action is requested. If the Examiner finds that a Telephone Conference would expedite the prosecution of this application, she is invited to telephone the undersigned at the number provided.

This response is being filed with a Petition for a Three-month Extension of Time, a Fee Transmittal sheet, and authorization to charge Deposit Account No. 50-0851 for the requisite government fees. The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extension of time, or credit any overpayment to Deposit Account No. 50-0815, order number 2300-1481.

Respectfully submitted,

Date: May 29, 2001

By: 
Carol L. Francis
Registration No. 36,513

BOZICEVIC, FIELD & FRANCIS LLP
200 Middlefield Road, Suite 200
Menlo Park, CA 94025
Telephone: (650) 327-3400
Facsimile: (650) 327-3231

Enclosures: 1) Replacement page number 638
2) Declaration by Carol L. Francis Under 37 CFR §1.132 (regarding deposit)
3) Declaration of Filippo Randazzo and George Lamson Under 37 CFR §1.132
4) U.S. Pat. No. 5,861,248

F:\DOCUMENT\2300\1481\oa [11-29-00] resp to PTO-revised.wpd



VERSION WITH MARKINGS TO SHOW CHANGES MADE

22. (Amended) An isolated polynucleotide comprising at least [15] 35 contiguous nucleotides of a nucleotide sequence [having at least 90% sequence identity to a sequence] selected from the group consisting of: SEQ ID NO:65, a degenerate variant of SEQ ID NO:65, and a complement of SEQ ID NO:65.

24. (Amended) An isolated antisense nucleic acid molecule comprising at least [15] 35 contiguous nucleotides of the polynucleotide of claim 22.

31. (Amended) An isolated polynucleotide comprising at least [15] 50 contiguous nucleotides of a nucleotide sequence [having at least 90% sequence identity to a sequence] selected from the group consisting of: SEQ ID NO:253, a degenerate variant of SEQ ID NO:253, and a complement of SEQ ID NO:253.

33. (Amended) An isolated antisense nucleic acid molecule comprising at least [15] 50 contiguous nucleotides of the polynucleotide of claim 31.

40. (Amended) An isolated polynucleotide comprising at least [15] 250 contiguous nucleotides of a nucleotide sequence [having at least 90% sequence identity to a sequence] selected from the group consisting of: SEQ ID NO:329, a degenerate variant of SEQ ID NO:329, and a complement of SEQ ID NO:329.

42. (Amended) An isolated antisense nucleic acid molecule comprising at least [15] 250 contiguous nucleotides of the polynucleotide of claim 40.

49. (Amended) An isolated polynucleotide comprising at least [15] 35 contiguous nucleotides of a nucleotide sequence [having at least 90% sequence identity to a sequence] selected from the group consisting of: SEQ ID NO:739, a degenerate variant of SEQ ID NO:739, and a complement of SEQ ID NO:739.

51. (Amended) An isolated antisense nucleic acid molecule comprising at least [15] 35 contiguous nucleotides of the polynucleotide of claim 49.

58. (Amended) An isolated polynucleotide comprising at least [15] 100 contiguous nucleotides of a nucleotide sequence [having at least 90% sequence identity to a sequence] selected from the group consisting of: SEQ ID NO:1186, a degenerate variant of SEQ ID NO:1186, and a complement of SEQ ID NO:1186.

60. (Amended) An isolated antisense nucleic acid molecule comprising at least [15] 100 contiguous nucleotides of the polynucleotide of claim 58.

67. (Amended) An isolated polynucleotide comprising at least [15] 20 contiguous nucleotides of a nucleotide sequence [having at least 90% sequence identity to a sequence] selected from the group consisting of: SEQ ID NO:1780, a degenerate variant of SEQ ID NO:1780, and a complement of SEQ ID NO:1780.

69. (Amended) An isolated antisense nucleic acid molecule comprising at least [15] 20 contiguous nucleotides of the polynucleotide of claim 67.

76. (Amended) An isolated polynucleotide comprising at least [15] 100 contiguous nucleotides of a nucleotide sequence [having at least 90% sequence identity to a sequence] selected from the group consisting of: SEQ ID NO:1899, a degenerate variant of SEQ ID NO:1899, and a complement of SEQ ID NO:1899.

78. (Amended) An isolated antisense nucleic acid molecule comprising at least [15] 100 contiguous nucleotides of the polynucleotide of claim 76.

85. (Amended) An isolated polynucleotide comprising at least [15] 100 contiguous nucleotides of a nucleotide sequence [having at least 90% sequence identity to a sequence] selected from the group consisting of: SEQ ID NO:1938, a degenerate variant of SEQ ID NO:1938, and a complement of SEQ ID NO:1938.

87. (Amended) An isolated antisense nucleic acid molecule comprising at least [15] 100 contiguous nucleotides of the polynucleotide of claim 85.

94. (Amended) An isolated polynucleotide comprising at least [15] 50 contiguous nucleotides of a nucleotide sequence [having at least 90% sequence identity to a sequence] selected from the group consisting of: SEQ ID NO:1998, a degenerate variant of SEQ ID NO:1998, and a complement of SEQ ID NO:1998.

96. (Amended) An isolated antisense nucleic acid molecule comprising at least [15] 50 contiguous nucleotides of the polynucleotide of claim 94.

103. (Amended) An isolated polynucleotide comprising at least [15] 50 contiguous nucleotides of a nucleotide sequence [having at least 90% sequence identity to a sequence] selected from the group consisting of: SEQ ID NO:2007, a degenerate variant of SEQ ID NO:2007, and a complement of SEQ ID NO:2007.

105. (Amended) An isolated antisense nucleic acid molecule comprising at least [15] 50 contiguous nucleotides of the polynucleotide of claim 103.



#19 P3 6/4/01
RECEIVED

JUN 07 2001
Attorney's Docket No. 2300-1481WO

TECH CENTER 1600/2900

UNITED STATES RECEIVING OFFICE
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: CHIRON CORPORATION et al.

International Application No.: PCT/US99/01619

International Filing Date: 28 January 1999 (28/01/99)

For: NOVEL HUMAN GENES AND GENE EXPRESSION PRODUCTS II

**REQUEST TO RECORD REFERENCES TO
BIOLOGICAL MATERIALS UNDER RULE 13bis**

Assistant Commissioner for Patents
Box PCT
Washington, D.C. 20231

Attn: RO/US

Sir:

The indications made below relate to the deposited microorganisms or other biological materials referred to in the headings of Tables on pages 131 and 132, Table 21 (pages 591-594), and Tables 22-24 (pages 638-652) of the above-identified application.

<u>cDNA Library Ref. No.</u>	<u>ATCC Deposit No.</u>
ES17 (Table 21)	207064 (originally listed as X1)
ES18 (Table 21)	207065 (originally listed as X2)
ES19 (Table 21)	207066 (originally listed as X3)
ES20 (Table 22)	207067
ES21 (page 131)	207068
ES22 (page 131)	207069
ES23 (page 131)	207070
ES24 (page 132)	207071
ES25 (page 132)	207072
ES26 (page 132)	207073
ES27 (Table 22)	207074
ES28 (Table 22)	207075
ES29 (Table 23)	207076
ES30 (Table 23)	207077
ES31 (Table 24)	207078
ES32 (Table 24)	207079
ES33 (Table 24)	207080

Replacement pages and Tables are enclosed containing the ATCC Deposit No.

information.

International Application No. PCT/US99/01619
Page 2

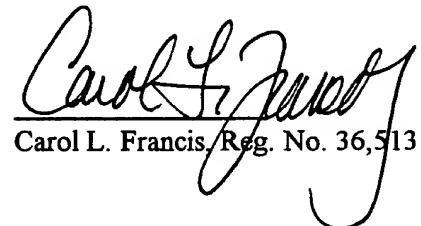
All items were deposited with American Type Culture Collection, Manassas, VA 20110-2209, USA on 22 January 1999.

Under Rule 13bis.4(a)(i), Applicants believe this information should be considered by any designated Office to have been furnished in time, as 16 months from the priority date would be 28 May 1999.

If any additional information is required, the IB is requested to contact the undersigned.

Should the International Authorities have any questions, a telephone call to the undersigned attorney for the Applicants would be appreciated.

Respectfully submitted,



Carol L. Francis, Reg. No. 36,513

Date: 19 March 1999

BOZICEVIC, FIELD & FRANCIS LLP
285 Hamilton Avenue, Suite 200
Palo Alto, California 94301
Tel: (650) 327-3400
Fax: (650) 327-3231

In the United States Patent and Trademark Receiving Office

File No.:	2300-1481WO	Date Mailed:	19 March 1999	Serial No.:	PCT/US99/01619
Applicant:	Chiron Corporation et al.			Date Filed:	28 January 1999
Title: NOVEL HUMAN GENES AND GENE EXPRESSION PRODUCTS II					
Enclosures:					
<ul style="list-style-type: none"> • Certificate of Express Mail Label No. <u>EL105871280US</u> • Request to Record References to Biological Materials under Rule 13bis (2 pages) • Replacement pages 131 and 132 • Replacement Table 21 (4 pages) • Replacement Tables 22-24 (15 pages) • Return receipt postcard 					
<i>Acknowledge receipt of the enclosures by imprinting the PTO "date stamp" and returning to addressee indicated on the reverse</i>					



EL105871280US*

EL105871280US



UNITED STATES POSTAL SERVICE™

POST OFFICE TO ADDRESSEE

Mailing Label
Label 11-F
July 1997

ORIGIN (POSTAL USE ONLY)		DELIVERY (POSTAL USE ONLY)		
PO ZIP Code	Day of Delivery	Flat Rate Envelope	Employee Signature	
	<input type="checkbox"/> Next <input type="checkbox"/> Second	<input type="checkbox"/>	Mo. Day	<input type="checkbox"/> AM <input type="checkbox"/> PM
Date In	Postage			Employee Signature
Mo. Day Year	<input type="checkbox"/> 12 Noon <input type="checkbox"/> 3 PM	\$	Mo. Day	<input type="checkbox"/> AM <input type="checkbox"/> PM
Time In	<input type="checkbox"/> Military <input type="checkbox"/> 2nd Day <input type="checkbox"/> 3rd Day	Return Receipt Fee	Delivery Date	<input type="checkbox"/> AM <input type="checkbox"/> PM
Weight	lbs. ozs.	Int'l Alpha Country Code	COD Fee	Employee Signature
No Delivery	<input type="checkbox"/> Weekend <input type="checkbox"/> Holiday	Acceptance Clerk Initials	Total Postage & Fees	Signature of Addressee or Agent
			\$	X
CUSTOMER USE ONLY		Name - Please Print		
METHOD OF PAYMENT:		X		
Express Mail Corporate Acct. No. X940047		<input type="checkbox"/> WAIVER OF SIGNATURE (Domestic Only: Additional merchandise insurance is void if waiver of signature is requested. I wish delivery to be made without obtaining signature of addressee or addressee's agent (if delivery employee judges that article can be left in secure location) and I authorize that delivery employee's signature constitutes valid proof of delivery. NO DELIVERY <input type="checkbox"/> Weekend <input type="checkbox"/> Holiday		
Federal Agency Acct. No. or Postal Service Acct. No.		Customer Signature		
FROM: (PLEASE PRINT)		TO: (PLEASE PRINT)		
PHONE (650) 327-3400		PHONE _____		
BOZICEVIC & REED LLP 285 HAMILTON AVE STE 200 PALO ALTO CA 94301-2538		BOX PCT ASST COMMISSIONER OF PATENTS WASHINGTON DC 20231-0001		
105871280US PRESS HARD. You are making 3 copies.				
FOR PICKUP OR TRACKING CALL 1-800-222-1811 www.usps.gov				

TRANSMITTAL LETTER TO THE
UNITED STATES RECEIVING OFFICE

O I P E
JUN 04 2001
TRADEMARK OFFICE

Date

19 March 1999

International Application No.

PCT/US99/04679

Attorney Docket No.

2300-1481WO

RECEIVED

I. Certification under 37 CFR 1.10 (if applicable)

FI 105 871 280US
Express Mail mailing number

JUN 07 2001
19 March 1999
TECH CENTER 1600/2900

I hereby certify that the application/correspondence attached hereto is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Assistant Commissioner for Patents, Washington, D.C. 20231

Billy Palmen

Signature of person mailing correspondence

BILLY PALMEN

Typed or printed name of person mailing correspondence

II. New International Application

TITLE	Earliest priority date (Day/Month/Year)
-------	--

SCREENING DISCLOSURE INFORMATION: In order to assist in screening the accompanying international application for purposes of determining whether a license for foreign transmittal should and could be granted and for other purposes, the following information is supplied. (Note: check as many boxes as apply):

- A. The invention disclosed was not made in the United States.
- B. There is no prior U.S. application relating to this invention.
- C. The following prior U.S. application(s) contain subject matter which is related to the invention disclosed in the attached international application. (NOTE: priority to these applications may or may not be claimed on form PCT/RO/101 (Request) and this listing does not constitute a claim for priority.)

application no.		filed on	
application no.		filed on	
application no.		filed on	
application no.		filed on	
application no.		filed on	

- D. The present international application contains additional subject matter not found in the prior U.S. application(s) identified in paragraph C above. The additional subject matter is found on pages || and Does Not ALTER MIGHT BE CONSIDERED TO ALTER the general nature of the invention in a manner which would require the U.S. application to have been made available for inspection by the appropriate defense agencies under 35 U.S.C. 181 and 37 CFR 5.1. See 37 CFR 5.15.

III. A Response to an Invitation from the RO/US. The following document(s) is(are) enclosed:

- A. A Request for An Extension of Time to File a Response
- B. A Power of Attorney (General)
- C. Replacement pages:

pages	of the request (PCT/RO/101)	pages	of the figures
pages	of the description	pages	of the abstract
pages	of the claims		

D. Submission of Priority Documents

Priority document	Priority document
-------------------	-------------------

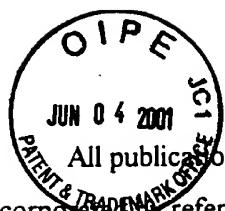
E. Fees as specified on attached Fee Calculation sheet form PCT/RO/101 annex.

IV. A Request for Rectification under PCT Rule 91 A Petition A Sequence Listing Diskette

V. Other (please specify): transmittal, Request to Record References to Biological Materials under Rule 13bis (2 pages), Replacement pages 131 and 132, Replacement Table 21 (4 pages), Replacement Tables 22-24 (15 pages), postcard

<input type="checkbox"/> Applicant	
<input checked="" type="checkbox"/> Attorney/Agent (Reg. No.) 36,513	Typed name of signer Carol L. Francis
<input type="checkbox"/> Common Representative	<i>Carol L. Francis</i> Signature

The person
signing
this
form is
the:



RECEIVED

JUN 07 2001

All publications and patent applications cited in this specification are herein incorporated by reference as if each individual publication or patent application were specifically and individually indicated to be incorporated by reference. The citation of any publication is for its disclosure prior to the filing date and should not be construed as an admission that the present invention is not entitled to antedate such publication by virtue of prior invention.

5 Although the foregoing invention has been described in some detail by way of illustration and example for purposes of clarity of understanding, it is readily apparent to those of ordinary skill in the art in light of the teachings of this invention that certain 10 changes and modifications may be made thereto without departing from the spirit or scope of the appended claims.

Deposit Information:

The following materials were deposited with the American Type Culture 15 Collection: CMCC = (Chiron Master Culture Collection)

Cell Lines Deposited with ATCC

Cell Line	Deposit Date	ATCC Accession No.	CMCC Accession No.
KM12L4-A	March 19, 1998	CRL-12496	11606
Km12C	May 15, 1998	CRL-12533	11611
MDA-MB-231	May 15, 1998	CRL-12532	10583
MCF-7	October 9, 1998	CRL-12584	10377

cDNA Libraries Deposited with ATCC

cDNA Library No.	cDNA Library ES21	cDNA Library ES22	cDNA Library ES23
Deposit Date	January 22, 1999	January 22, 1999	January 22, 1999
ATCC Accession No.	ATCC No. 207068	ATCC No. 207069	ATCC No. 207070
Clone Names	M00001575D:G05 M00001460A:A03 M00001655C:E04 M00001676C:C11 M00001679D:D05 M00001546B:C05 M00001453B:E10	M00001364A:E11 M00001694C:H10 M00003841D:E03 M00004176D:B12 M00001387B:E02 M00004282B:A04 M00001376B:F03 M00001445D:A06 M00001399C:H12 M00004208D:H08	M00001489B:A06 M00001585A:D06 M00001637B:E07 M00001529D:H02 M00001500C:C08 M00001483B:D03 M00001623C:H07 M00003975B:F03

cDNA Library No.	cDNA Library ES24	cDNA Library ES25	cDNA Library ES26
Deposit Date	January 22, 1999	January 22, 1999	January 22, 1999
ATCC Accession No.	ATCC No. 207071	ATCC No. 207072	ATCC No. 207073
Clone Names	M00003987D:D06 M00004073A:H12 M00004104B:F11 M00004237D:D08 M00004111D:B07 M00004138B:B11 M00001391C:C04 M00001448D:E12 M00001450A:B03 M00001451B:F01	M00001675D:B08 M00001589B:E12 M00001607D:A11 M00001636A:E07 M00001530A:B12 M00001495B:B08 M00001487C:F01 M00001644B:D06 M00003751C:A04	M00001479C:F10 M00003842D:F08 M00003901A:C09 M00003982A:B06 M00003824A:A06 M00003845D:C03 M00003856A:B07 M00004104B:A02 M00004110C:E03

In addition, libraries of selected clones were deposited. The details of these deposits are provided in Tables 21-24.

This deposit is provided merely as convenience to those of skill in the art, and is not

5 an admission that a deposit is required under 35 U.S.C. §112. The sequence of the polynucleotides contained within the deposited material, as well as the amino acid sequence of the polypeptides encoded thereby, are incorporated herein by reference and are controlling in the event of any conflict with the written description of sequences herein. A license may be required to make, use, or sell the deposited material, and no such license is

10 granted hereby.

Retrieval of Individual Clones from Deposit of Pooled Clones

Where the ATCC deposit is composed of a pool of cDNA clones, the deposit was prepared by first transfecting each of the clones into separate bacterial cells. The clones

15 were then deposited as a pool of equal mixtures in the composite deposit. Particular clones can be obtained from the composite deposit using methods well known in the art. For example, a bacterial cell containing a particular clone can be identified by isolating single colonies, and identifying colonies containing the specific clone through standard colony hybridization techniques, using an oligonucleotide probe or probes designed to specifically

20 hybridize to a sequence of the clone insert (e.g., a probe based upon unmasked sequence of the encoded polynucleotide having the indicated SEQ ID NO). The probe should be designed to have a T_m of approximately 80°C (assuming 2°C for each A or T and 4°C for each G or C). Positive colonies can then be picked, grown in culture, and the recombinant clone isolated. Alternatively, probes designed in this manner can be used to PCR to isolate

25 a nucleic acid molecule from the pooled clones according to methods well known in the art,

Table 21. Clones Deposited on January 22, 1999

cDNA Library Ref. ATCC No	Library ES17 207064	Library ES18 207065	Library ES19 207066
Clone Names	M00001601A:E09 M00001368A:D07 M00003917A:D02 M00001673A:A04 M00003868B:G11 M00003917C:D03 M00003791C:E09 M00003870A:C05 M00003922A:D02 M00003861C:H02 M00003931B:A11 M00001679D:B05 M00001679C:D05 M00001687A:G01 M00003945A:E09 M00003908A:H09 M00001649B:G12 M00003813D:H12 M00004087C:D03 M00004269B:C08 M00004348A:A02 M00001679C:D01 M00001490A:E11 M00001387A:E10 M00001397B:G03 M00001441D:E04 M00001352C:G09 M00001370D:A12 M00001387B:A06 M00001397C:A10 M00001536D:G02 M00003895C:A10 M00001464B:B03 M00004370A:G05 M00001490B:H11 M00001530B:D10 M00001579C:E09 M00001587A:H03 M00001457C:H12 M00001535C:E01 M00001561D:C05 M00001589A:C01 M00001664D:G07 M00001565A:H09 M00001381C:B08 M00001395C:F11 M00001429D:F11	M00001594A:D06 M00001613D:H10 M00001596D:E10 M00001592C:G04 M00001599D:A09 M00001619B:A09 M00001593B:E11 M00001605A:E06 M00001608A:D03 M00001616C:A02 M00001617A:D06 M00001595C:E01 M00001616C:A11 M00001608C:E11 M00001610C:E06 M00001612B:D11 M00001618B:E05 M00001621C:C10 M00001647A:H08 M00001631D:B10 M00001608D:E09 M00001641B:C10 M00001641D:E02 M00001630D:H10 M00001585C:D10 M00001560A:H10 M00001573B:C06 M00001660C:D11 M00001641C:C05 M00001578B:B05 M00001587C:C10 M00001590B:C07 M00001554A:E04 M00001570C:G06 M00001576A:B09 M00001582A:H01 M00001582B:E12 M00001615B:F07 M00001571C:A04 M00001573D:D10 M00001576A:F11 M00001579C:G05 M00001582D:A02 M00001589B:E07 M00001575B:B02 M00001578C:G06 M00001591A:B08	M00003906A:F04 M00003908A:F12 M00003914A:G09 M00003915C:H04 M00003905D:B08 M00003908C:G09 M00003914B:A11 M00003916C:C05 M00003959A:A03 M00003905D:C08 M00003908D:D12 M00003901B:H04 M00004031A:E01 M00004029C:C12 M00003911A:F10 M00003914C:F09 M00003963D:B05 M00003986C:E09 M00004031A:F07 M00003907C:C02 M00003911B:F08 M00003914C:H05 M00003918C:C12 M00003914C:C02 M00003914A:E04 M00003903B:D03 M00003905A:F09 M00003867C:E11 M00003870B:B08 M00003879D:A08 M00003891D:B10 M00003901C:A08 M00003903C:C04 M00003905A:F10 M00003906C:D06 M00003907D:A12 M00003905C:G11 M00003914D:D10 M00003972A:G09 M00003975D:C06 M00003905C:B02 M00003907D:F11 M00003914A:G06 M00003914D:E03 M00003972C:F08 M00003976C:D06 M00003907C:C04

M00001449A:F01	M00001607A:F11	M00003905B:C06
M00001391C:H02	M00001579C:E06	M00004088C:A12
M00001429D:H12	M00001661C:F11	M00004103C:D04
M00001450A:G11	M00001650B:C10	M00004107A:D01
M00001344B:F12	M00001654C:E04	M00004110A:E04
M00001391D:C06	M00001656B:A08	M00004062A:H06
M00003971A:A06	M00001662C:B02	M00004075D:C10
M00001346A:E04	M00001656B:D05	M00004081D:H09
M00001455C:G07	M00001661C:F10	M00004089A:B08
M00001402D:F02	M00001663A:C11	M00004103D:F10
M00001438D:C06	M00001669A:C10	M00004107B:B04
M00001349B:G05	M00001651B:B12	M00004032C:B02
M00001389C:A08	M00001653B:E06	M00004078C:F04
M00001439B:A10	M00001659C:F02	M00004038B:H10
M00001455B:A09	M00001661B:F03	M00004089A:E02
M00001441B:D11	M00001663C:F10	M00004096B:F05
M00001453A:B01	M00001669A:G12	M00004104C:H12
M00001456D:E08	M00001674D:C10	M00004110D:A10
M00001399A:C03	M00001651B:E06	M00004036D:F02
M00004496C:H03	M00001651C:C05	M00004088C:E04
M00004135D:G02	M00001657C:C07	M00004104D:A04
M00004692A:E07	M00001662A:C12	M00004107D:E12
M00004374D:E10	M00001663D:C06	M00004115D:D08
M00004405D:C04	M00001590B:C05	M00003846A:D03
M00004312B:H07	M00001483C:G06	M00004072C:F08
M00003976C:A10	M00001653A:G07	M00004039B:G08
M00004043A:D02	M00001625B:C10	M00003986D:D02
M00004081C:H06	M00001626C:D12	M00003914A:B07
M00004050D:A06	M00001634D:D02	M00003914D:B02
M00001361B:C07	M00001641C:C06	M00003971B:B07
M00004341B:G03	M00001642D:F02	M00003978C:A03
M00001342B:E01	M00001647B:E04	M00003983B:C08
M00004064D:A11	M00001632B:E05	M00004033D:D07
M00004087A:G08	M00001639A:C11	M00004072D:H12
M00004344B:H04	M00001642D:G10	M00004077B:H11
M00004497A:H03	M00001624A:G11	M00004080A:F01
M00001338C:E10	M00001626C:G08	M00004092C:B03
M00001366D:E12	M00001672D:D04	M00004037B:C04
M00001390D:E03	M00001639A:H06	M00004073C:D04
M00001413B:H09	M00001662C:A04	M00004081A:A08
M00004271B:B06	M00001641B:B01	M00004085B:B05
M00004151D:E03	M00001673C:A02	M00004090C:C07
M00001660B:C04	M00001650A:A12	M00004086D:B09
M00003802D:B11	M00001659D:D03	M00004088D:B03
M00001579C:E08	M00001661B:B05	M00004090C:C10
M00001557D:C08	M00001671D:E10	M00004102C:D09
M00003779B:E12	M00001652D:A06	M00004105C:E09
M00001638A:D10	M00001654C:D05	M00004035A:G10
M00003794A:B03	M00001656A:B07	M00003906A:H07
M00001616C:F07	M00001647B:C09	M00004083B:G03

M00001679A:F01	M00001635A:C06	M00001675B:E02
M00001604C:E09	M00001482D:A04	M00003793C:D09
M00001653B:E09	M00001485C:B10	M00003762B:H09
M00001585A:F07	M00001457D:A07	M00001694C:F12
M00003811D:A12	M00001461A:E05	M00001678D:C11
M00001653C:F12	M00001477A:G07	M00001677D:B07
M00001679D:F06	M00001479D:H03	M00001677B:A02
M00003751D:B02	M00001482C:D02	M00001675B:H03
M00003801A:B10	M00001484D:G05	M00003808D:D04
M00003844C:A08	M00001459B:D03	M00003752B:C02
M00001636C:C01	M00001464B:C11	M00003819D:B11
M00001669C:B01	M00001511A:A05	M00001677D:B02
M00003755A:A09	M00001477B:C02	M00001694C:G04
M00003798D:H08	M00001471A:D04	M00003789C:F06
M00001444C:D05	M00001485C:H10	M00001678C:C06
M00004040B:F10	M00001485D:E05	M00001675B:D02
M00001355A:C12	M00001487C:G03	M00003750C:H05
M00001401A:H07	M00001514A:B04	M00001694A:B12
M00001393B:B09	M00001530C:G10	M00001677B:H06
M00001409D:F11	M00001534A:G06	M00001675C:G01
M00001387B:H07	M00001539A:C12	M00001675B:C01
M00001394C:C11	M00001547A:F11	M00003857B:F07
M00001344A:H07	M00001550D:A04	M00003812B:D07
M00001490C:D07	M00001460A:F07	M00001694B:B08
M00001352C:F06	M00001472C:A01	M00001677B:E06
M00001476D:G03	M00001481B:A07	M00004037A:E04
M00001399C:D09	M00001456D:F05	M00003870A:H01
M00001347C:G08	M00001456D:G11	M00003842C:D11
M00001453D:G12	M00001477D:F10	M00003828B:F09
M00001382A:F04	M00001481A:G06	M00003856C:H09
M00001392D:H04	M00001464A:B03	M00003851A:C10
M00001429C:G12	M00001469A:G11	M00003841C:E04
M00001454A:C11	M00001478B:D07	M00003837C:G08
M00001517B:G08	M00001473A:C11	M00003828B:E07
M00001535A:D02	M00001457A:G03	M00003772C:B12
M00001352A:E12	M00001669B:G02	M00001677D:F03
M00001381B:F06	M00001479D:G06	M00001678B:B12
M00004117A:D11	M00001473D:B11	M00001678D:G03
M00004217C:D03	M00001475A:A12	M00001675C:F01
M00004270A:F11	M00001460A:G07	M00003809A:H04
M00003996A:A06	M00001464A:D03	M00003771D:G05
M00004056B:D09	M00001473D:G01	M00001678A:F05
M00004142A:B12	M00001476D:C05	M00001677B:B06
M00001396D:B03	M00001484A:A10	M00003794A:E12
M00001370D:E12	M00001457C:F02	M00003771B:E05
M00001390C:C11	M00001459B:A12	M00001678A:A11
M00003989A:H11	M00001464A:E07	M00003805B:C04
M00001426A:A09	M00001467A:B03	M00001680B:E10
M00004498D:D05	M00001514A:B08	M00001679B:H07
M00001391B:G12	M00001464A:B07	M00003904D:B12

M00001391D:D10	M00001579A:C03	M00003856C:B08
M00001376B:A02	M00001517A:G08	M00003858D:G06
M00001405B:D07	M00001530B:G09	M00003870B:F04
M00001368A:A03	M00001538A:F12	M00003871C:B05
M00001392D:B11	M00001540C:B03	M00003875A:C04
M00003900D:B10	M00001547A:F06	M00003901B:A09
M00001494B:C01	M00001550A:F07	M00003901C:D03
M00001352C:A05	M00001567B:G11	M00003904C:B06
M00001408B:G06	M00001572A:A10	M00003901C:F09
M00004252C:E03	M00001575B:G01	M00003904D:B10
M00003901C:A03	M00001487D:C11	M00003850D:H11
M00004071D:A10	M00001577B:A03	M00003902B:D06
M00001377B:H01	M00001539D:E10	M00003879A:C01
M00003939A:A02	M00001587A:F05	M00003877D:G05
M00004250D:D10	M00001560A:F03	M00003881D:C12
M00004290A:B03	M00001569B:G11	M00003903A:H09
M00003911D:B04	M00001573A:A06	M00003905A:A06
M00004128B:G01	M00001575D:A10	M00003875D:D09
M00004142A:D08	M00001583A:D01	M00003879B:A06
M00003977A:E04	M00001587A:F08	M00003823D:G05
M00004236C:D10	M00001590B:B02	M00003763A:C01
M00004388B:A08	M00001553A:E07	M00003903B:C02
M00004409B:A11	M00001560A:H06	M00003905A:E07
M00003965A:B11	M00001589C:A11	M00003867A:D12
M00003988A:E10	M00001538A:C08	M00003857C:C09
M00004138A:H09	M00001531A:H03	M00003829C:D10
M00003933C:D06	M00001548A:G01	M00003839D:E02
M00004193C:G11	M00001531A:H07	M00003841C:F03
M00004039C:C01	M00001542A:E04	M00003903D:C06
M00003924B:D04	M00001487A:F10	M00003852D:E08
M00004375C:D01	M00001503C:G05	M00003845D:A09
	M00001511A:G08	M00003824A:G10
	M00001539A:H12	M00003841C:F06
	M00001542A:F06	M00003848A:C09
	M00001549A:F01	M00003857C:F11
	M00001514A:A12	M00003816C:C01
	M00001516A:D05	M00003843A:E08
	M00001546C:C07	M00003850A:F06
	M00001549A:H11	M00003813B:A11
	M00001538A:D03	M00003855C:F10
	M00001544A:C09	M00003850D:B05
	M00001546B:F12	M00003841D:F06
	M00001550A:D09	M00003858B:G05
	M00001487B:F02	M00003854D:A12
	M00001513A:G07	M00003857C:G01
	M00001530A:F12	M00003816C:E09
	M00001538A:D12	M00003813A:G04
	M00001587A:G06	M00003850D:A05
	M00001551A:D04	
	M00001485B:C03	

Table 22. Clones Deposited on January 22, 1999

cDNA Ref No.; ATCC Accession No.	cDNA Library Ref ES20 ATCC No. 207067	cDNA Ref No. ES27 ATCC No. 207074	cDNA Library Ref ES28 ATCC No. 207075
Clone Names in Library	M00004891D:A07 M00004118B:C11 M00004105A:B10 M00004099A:F11 M00004037C:D07 M00004033D:C05 M00003983D:A09 M00004029B:H08 M00004927A:A02 M00003983C:F10 M00003980B:C06 M00004033D:B07 M00004034C:E08 M00005100B:H07 M00005136A:D10 M00005173D:H02 M00004891D:C11 M00004101A:F07 M00003982B:B06 M00004108C:E01 M00005136D:B07 M00004118D:A11 M00005102C:C01 M00005177C:A01 M00004927C:H11 M00005174D:B02 M00004027A:D06 M00005217A:G10 M00003984A:B06 M00003851C:D07 M00003959C:G06 M00005100B:G11 M00005213C:G01 M00003982B:H07 M00004029C:B03 M00004033D:G06 M00004091B:H09 M00003959D:A04 M00004030D:B06 M00004034C:C06 M00004030C:D12 M00003982C:H10 M00003971C:F09 M00004031B:A06 M00003966B:D02 M00004028B:G08 M00004031C:H10	M00001623B:G07 M00001619D:G05 M00001616C:C09 M00001615C:F03 M00001614D:D09 M00001608B:A03 M00001607D:F07 M00001623D:C10 M00001599B:E09 M00001632C:C09 M00001605C:D12 M00001625D:C07 M00001629B:E06 M00001594A:B12 M00001632C:A02 M00001567C:H12 M00001635C:A03 M00001636C:H09 M00001638A:E07 M00001639A:F10 M00001656C:G08 M00001632A:F12 M00001557A:D02 M00001529B:C04 M00001534B:C12 M00001535D:C01 M00001536D:A12 M00001540B:C09 M00001540D:D02 M00001541C:B07 M00001546B:B02 M00001575B:C09 M00001554B:C07 M00001578D:C04 M00001557C:H07 M00001558B:D08 M00001560D:A03 M00001561C:F06 M00001564D:C09 M00003748B:F02 M00001570D:A03 M00001660C:B12 M00001577B:H02 M00001548A:A08 M00003868B:D12 M00001718D:F07 M00003829C:A11	M00001550D:H02 M00001549C:D02 M00001549A:A09 M00001548A:B11 M00001546C:G10 M00001544C:C06 M00003820B:C05 M00001543A:H12 M00001540C:B10 M00001552B:G05 M00001543C:F01 M00001552D:G08 M00001554B:B07 M00001555A:B01 M00001557A:F01 M00001558A:E11 M00001561C:E11 M00001571D:B11 M00001563B:D11 M00001569C:B06 M00001539B:H06 M00001571B:E03 M00001561D:C11 M00001487C:D06 M00001454B:D08 M00003772D:E10 M00001573C:D03 M00001454D:E05 M00001455D:F09 M00001457C:C11 M00001459B:C09 M00001460A:E01 M00001460C:H02 M00001456A:H02 M00001477B:F04 M00003845D:B04 M00001488A:E01 M00001492D:A11 M00001496C:G10 M00001499A:A05 M00001500A:B02 M00001500D:E10 M00001513D:A03 M00001528A:C11 M00001528C:H04 M00001531B:E09 M00001463A:F06

cDNA Ref No.; ATCC Accession No.	cDNA Library Ref ES20 ATCC No. 207067	cDNA Ref No. ES27 ATCC No. 207074	cDNA Library Ref ES28 ATCC No. 207075
	M00004076D:B09	M00003832B:E01	M00003755A:B03
	M00004092D:B11	M00003842B:D09	M00001653B:G07
	M00003981C:F05	M00003845A:H12	M00001654D:G11
	M00004031D:F05	M00003847B:G03	M00001656B:A07
	M00004097B:D03	M00003847C:E09	M00001664B:D06
	M00003986D:G07	M00003853D:G08	M00001664C:H10
	M00004033B:C02	M00003828A:E04	M00001680B:C01
	M00004037B:A04	M00003867C:H09	M00001681A:F03
	M00004092C:B12	M00003822A:F02	M00001684B:G03
	M00005140D:G09	M00003868C:H10	M00001771A:A07
	M00004897D:G05	M00003871A:A05	M00003774C:D02
	M00004960B:D12	M00003879C:G10	M00003754D:D02
	M00005134C:G04	M00003880C:F10	M00001640B:F03
	M00005139A:F01	M00003881D:D06	M00003763B:H01
	M00005176A:C12	M00003884D:G07	M00003812C:A05
	M00005178A:A07	M00003887A:A06	M00003803C:D09
	M00005212A:A02	M00003889A:D10	M00003801B:B10
	M00005229D:H07	M00003889D:B09	M00003798D:E03
	M00004115C:H04	M00003858D:F12	M00003773B:G01
	M00004687A:C03	M00003774B:B08	M00003771A:G10
	M00004900C:E11	M00001680D:D02	M00001452A:E07
	M00004695B:E04	M00001528A:F09	M00004029B:F11
	M00005134D:A06	M00003748A:B07	M00003751B:A05
	M00004103B:B07	M00001655A:F06	M00001609B:A11
	M00005177A:B06	M00003750A:D01	M00001573D:F10
	M00005178A:A08	M00003761D:E02	M00001579C:B11
	M00004104D:B05	M00003763D:E10	M00001579C:H10
	M00004117B:G01	M00003768A:E02	M00001579D:G07
	M00004900D:B10	M00003829B:G03	M00001583B:E10
	M00005134D:H03	M00003772A:D07	M00001586D:E02
	M00005173C:A02	M00001661B:C08	M00001587D:A10
	M00005177A:H09	M00003778A:D08	M00001589A:D12
	M00005178B:H01	M00003799A:D09	M00001590C:H08
	M00005216C:B09	M00003800A:C09	M00001651B:A11
	M00003826B:E11	M00003804A:H04	M00001597A:E12
	M00001596A:G06	M00003806D:G05	M00001649C:B10
	M00005100B:D02	M00003808C:B05	M00001614A:E06
	M00005137A:E01	M00003811A:E03	M00001615C:D02
	M00004119A:A06	M00003815D:H09	M00001621D:D03
	M00004891D:E07	M00003818B:G12	M00001623D:G03
	M00004958B:D01	M00003769B:D03	M00001624A:F09
	M00005102C:F09	M00001390A:A09	M00001624C:A06
	M00005136D:C01	M00001432A:E06	M00001630B:A11
	M00005174D:H02	M00001381A:D02	M00001634B:C10
	M00005177C:B04	M00001383A:G04	M00001639D:B07
	M00005218B:D09	M00001384C:E03	M00001573D:F04
	M00004114B:D09	M00001384D:H07	M00004156B:A12
	M00004119D:A07	M00001385B:F10	M00004319D:G09
	M00004895C:G05	M00001385C:H11	M00004096A:G02

cDNA Ref No.; ATCC Accession No.	cDNA Library Ref ES20 ATCC No. 207067	cDNA Ref No. ES27 ATCC No. 207074	cDNA Library Ref ES28 ATCC No. 207075
	M00004235A:A12	M00001386A:C02	M00004101C:G08
	M00005134B:E01	M00001372C:F07	M00004102A:H02
	M00004115C:G03	M00001389D:G11	M00004108A:A09
	M00005175B:H04	M00001371D:G01	M00004111D:D11
	M00005214B:D11	M00001392C:D10	M00004115D:C08
	M00004102D:B05	M00001392D:H06	M00004118D:E08
	M00004115A:B12	M00001397B:B09	M00004121C:F06
	M00004119D:H06	M00001398A:G03	M00004131B:H09
	M00004897D:F03	M00001400A:F06	M00004141D:A09
	M00004960B:A09	M00001410B:G05	M00004090A:F09
	M00005134C:E11	M00001413A:F02	M00004146A:C08
	M00005138B:D12	M00001415B:E09	M00004078B:A11
	M00005176A:A05	M00001425A:C11	M00004176B:E08
	M00005214C:A09	M00001386A:D11	M00004188C:A09
	M00004102C:D01	M00001354C:B06	M00004233C:H09
	M00004960B:A08	M00001339D:G02	M00004241D:F11
	M00001476D:A09	M00001660A:C12	M00004246C:A09
	M00001572A:B06	M00001528A:A01	M00004247C:C12
	M00005217D:F12	M00001343D:C04	M00004248B:E08
	M00005233A:G08	M00001347B:E01	M00004257C:H06
	M00005236B:F10	M00001348A:D04	M00004260D:C12
	M00005259B:C01	M00001349C:C05	M00004295B:D02
	M00005254D:B08	M00001350A:D06	M00004040D:F01
	M00005259C:B05	M00001352D:C05	M00004142D:E10
	M00001575A:D06	M00001380C:E05	M00003853D:D03
	M00005259D:H08	M00001354B:B10	M00003860D:H07
	M00003813C:D08	M00001380C:F02	M00003878C:E04
	M00001530D:E06	M00001354C:C10	M00003879A:G05
	M00004891B:B12	M00001355B:G11	M00003880B:C08
	M00001596B:C11	M00001356D:F06	M00003881A:D09
	M00004300C:H09	M00001360D:E11	M00003881C:G09
	M00001486D:D12	M00001361C:H11	M00003901B:A05
	M00001585D:F03	M00001362C:A10	M00003904D:D10
	M00001596B:D09	M00001363C:H02	M00003905C:G10
	M00001570D:E06	M00001366D:G02	M00003906B:F12
	M00001582C:E01	M00001369A:H12	M00003909A:H04
	M00001586C:E06	M00001352D:D02	M00004091B:D11
	M00001593B:D10	M00001485D:B10	M00003963A:E03
	M00001595C:H11	M00001457B:E03	M00004353C:H07
	M00001596B:H05	M00001457C:C12	M00003919A:A10
	M00001576A:C11	M00001458C:E01	M00003938A:B04
	M00001596C:F09	M00001462B:A10	M00003939C:F04
	M00001567A:H05	M00001464D:F06	M00003946D:C11
	M00001585D:D11	M00001467D:H05	M00003979A:F03
	M00004688A:A02	M00001468B:H06	M00003985C:F01
	M00004927A:E06	M00001505C:H01	M00003997B:G07
	M00005229D:H09	M00001470A:H01	M00003860D:A01
	M00004117B:A12	M00001457A:B07	M00004035A:A04
	M00004187D:G09	M00001479B:A01	M00004042D:H02
	M00005173B:F01	M00001469D:D02	M00004073B:B01

cDNA Ref No.; ATCC Accession No.	cDNA Library Ref ES20 ATCC No. 207067	cDNA Ref No. ES27 ATCC No. 207074	cDNA Library Ref ES28 ATCC No. 207075
	M00005218A:G05	M00001487A:A05	M00003946A:H10
	M00004118A:H08	M00001352C:H02	M00001423D:A09
	M00005134A:D11	M00001488D:C10	M00004314B:G07
	M00005176C:C09	M00001490C:C12	M00001405D:D11
	M00005230D:F06	M00001493B:D09	M00001408A:H04
	M00005234D:B04	M00001504D:D11	M00001408D:D04
	M00005101C:E09	M00001376B:C06	M00001411D:F05
	M00004206A:E02	M00001506B:D09	M00001412A:E04
	M00001570C:A05	M00001511B:C06	M00001413A:F03
	M00005231A:H04	M00001476B:F10	M00001417B:C04
	M00005235A:A03	M00001450D:D04	M00001417D:A04
	M00004118B:B04	M00001433A:G07	M00001418B:F07
	M00005136D:D06	M00001470C:B10	M00001419D:C10
	M00005231C:B01	M00001437D:C04	M00001402B:F12
	M00004153B:B03	M00001447C:C01	M00001423A:G05
	M00004897C:D06	M00001448B:F06	M00001401C:H03
	M00005136D:G06	M00001449D:A06	M00001423D:D12
	M00005212B:A02	M00001433B:H11	M00001424B:H04
	M00005232A:C10	M00001451D:C10	M00001428B:A09
	M00004692A:H10	M00001452A:C07	M00001430A:A02
	M00005101C:B09	M00001453C:A11	M00001432D:F05
	M00004144A:F04	M00001456B:C09	M00001438B:B09
	M00003852B:D11	M00001454B:G03	M00001445B:E04
	M00001660D:E05	M00001454B:G07	M00001445C:A08
	M00003808A:F09	M00001454C:C08	M00001446C:D09
	M00001656A:D10	M00001454C:F02	M00001448A:G09
	M00001671A:H06	M00001454D:D06	M00001449C:H12
	M00003809C:H07	M00001456B:F10	M00001422C:F12
	M00003853C:C06	M00001455D:A09	M00001352C:H10
	M00003860A:A08	M00001455D:A11	M00004375A:H01
	M00003822B:D08	M00001448D:F09	M00004380B:A05
	M00003845A:E12		M00004444B:D11
	M00003854C:C02		M00001338B:E02
	M00003860B:G09		M00001341A:F12
	M00003822B:G01		M00001344A:G07
	M00001670A:C11		M00001345A:G11
	M00003852A:B03		M00001345B:E10
	M00003829D:A11		M00001345C:B01
	M00003854C:F01		M00001346B:B07
	M00003856B:C04		M00001405B:E09
	M00003905A:H11		M00001352B:F04
	M00001530A:F11		M00001451C:E01
	M00003840B:E07		M00001361A:H07
	M00003905B:G03		M00001362B:H06
	M00003840B:E08		M00001372C:G12
	M00003855A:C12		M00001375B:G12
	M00003905B:H05		M00001376A:C05
	M00003826B:B04		M00001376B:A08
	M00003851C:B06		M00001377C:E12
	M00003853B:C08		M00001382B:F12

cDNA Ref No.; ATCC Accession No.	cDNA Library Ref ES20 ATCC No. 207067	cDNA Ref No. ES27 ATCC No. 207074	cDNA Library Ref ES28 ATCC No. 207075
	M00003829A:F03		M00001385A:F12
	M00001638C:G01		M00001394A:E04
	M00003845D:B02		M00001395A:C09
	M00001653D:G07		M00001396A:H03
	M00001578B:A02		M00001350B:G11
	M00001590B:H10		
	M00001595C:A09		
	M00001596A:E07		
	M00001607A:B06		
	M00001607A:D10		
	M00001652C:B09		
	M00001671B:F02		
	M00001632C:D08		
	M00001638C:H07		
	M00001652D:B09		
	M00001614C:E11		
	M00001633B:B11		
	M00001651C:A04		
	M00001639D:G12		
	M00001671C:F11		
	M00001638A:B04		
	M00001637C:H12		
	M00001669B:H06		
	M00001639D:F02		
	M00001590A:C08		
	M00001636A:C02		
	M00001614A:A04		
	M00001639D:G06		

Table 23. Library Deposited on January 22, 1999

cDNA Ref No.; ATCC Accession No.	cDNA Library Ref ES29 ATCC No. 207076	cDNA Library Ref ES30 ATCC No. 207077
Clone Names in Library	M00001449D:B01 M00001476D:F03 M00001456C:B12 M00001469B:B01 M00001471A:B04 M00001472A:D08 M00001473A:A07 M00001473C:D09 M00001475B:C04 M00001475C:G11 M00001476A:D11 M00001476B:D10 M00001468A:C05 M00001476C:C11 M00001467A:H07 M00001477B:E02 M00001478B:H08 M00001479C:E01 M00001480A:D03 M00001480C:A05 M00001481A:H08 M00001481B:D09 M00001482A:H05 M00001482D:H11 M00001483C:G09 M00001485A:C05 M00001476B:F08 M00001460A:E11 M00001456C:C11 M00001457A:C05 M00001457A:G12 M00001458A:A11 M00001458C:D10 M00001458D:A01 M00001458D:A02 M00001458D:C11 M00001458D:D01 M00001459B:C11 M00001468A:H10 M00001460A:C10 M00001485B:F05 M00001460A:H11 M00001461A:F05 M00001462A:D03 M00001464A:B02	M00001594D:B08 M00001593A:B07 M00001594A:C01 M00001594A:D08 M00001594A:G09 M00001595C:B05 M00001594B:F12 M00001596D:E03 M00001594D:C03 M00001592C:F11 M00001590D:G07 M00001595D:A04 M00001595D:G03 M00001601A:A06 M00001590C:F10 M00001589B:B08 M00001589C:E06 M00001611B:A05 M00001601A:E02 M00001587A:D01 M00001591B:B12 M00001590B:G08 M00001592C:E05 M00001591B:B06 M00001591D:C07 M00001591D:F06 M00001592A:E02 M00001592A:H05 M00001592B:A04 M00001587A:B10 M00001609D:G10 M00005231D:B09 M00001614B:E08 M00005217C:C01 M00001587A:B01 M00001613D:B03 M00001613A:F03 M00001611C:H11 M00001611C:C12 M00001611B:E06 M00001611B:A09 M00001610D:D05 M00001610B:C07 M00001610C:E07 M00001610A:E09

cDNA Ref No.; ATCC Accession No.	cDNA Library Ref ES29 ATCC No. 207076	cDNA Library Ref ES30 ATCC No. 207077
	M00001464A:E10	M00001601A:E12
	M00001465A:B12	M00001609B:C09
	M00001465A:C12	M00001608D:D11
	M00001465A:E10	M00001608B:A09
	M00001465A:G06	M00001607D:F06
	M00001466A:F08	M00001607B:C05
	M00001467A:C10	M00001606A:H09
	M00001460A:B12	M00001605A:H03
	M00001545A:B12	M00001605A:E09
	M00001535A:D10	M00001605A:A06
	M00001536A:F11	M00001604A:C11
	M00001537A:H05	M00001604A:C07
	M00001539A:E01	M00001604A:B08
	M00001539A:H02	M00001604A:A09
	M00001539B:G07	M00001610A:H05
	M00001539D:B10	M00005214B:A06
	M00001540D:E02	M00005228A:A09
	M00001541B:E05	M00001567A:B09
	M00001542A:G12	M00001561A:D01
	M00001485B:D09	M00001559A:C08
	M00001545A:B10	M00001559A:A11
	M00001533A:G05	M00001558A:G09
	M00001545A:F02	M00001555A:B12
	M00001545A:G05	M00001554A:A08
	M00001546A:D08	M00001552A:H10
	M00001548A:H04	M00001552A:F06
	M00001550A:E07	M00005231C:B07
	M00001551A:A11	M00005218D:G10
	M00001551A:D06	M00001570A:H01
	M00001551A:H06	M00005214D:D10
	M00001551D:H07	M00001570C:G03
	M00001552A:E10	M00005213C:A01
	M00001450A:B08	M00005212D:F08
	M00001544A:F05	M00005212A:D10
	M00001512A:G05	M00005211C:E09
	M00001483B:D04	M00005211A:E09
	M00001485B:H03	M00005210D:C09
	M00001485C:C08	M00005179D:B03
	M00001486B:D07	M00005179B:H02
	M00001486B:E12	M00005177D:F09
	M00001487B:A11	M00005177C:G04
	M00001487B:E10	M00005177B:H02
	M00001507A:A11	M00001614D:B08
	M00001507A:B02	M00001615A:D06
	M00001507A:C05	M00005216B:D02
	M00001507A:E04	M00001579C:A01

cDNA Ref No.; ATCC Accession No.	cDNA Library Ref ES29 ATCC No. 207076	cDNA Library Ref ES30 ATCC No. 207077
	M00001534A:D03	M00001585B:C03
	M00001511A:G01	M00001585B:A06
	M00001533D:A08	M00001584D:H02
	M00001513A:F05	M00001584A:G03
	M00001514A:G03	M00001583D:B08
	M00001516A:D02	M00001583B:F02
	M00001516A:F06	M00001583A:F07
	M00001517A:B11	M00001583A:A05
	M00001529D:C05	M00001582D:F02
	M00001530A:A09	M00001582D:B01
	M00001530A:E10	M00001582A:A03
	M00001532A:C01	M00001579D:H09
	M00001532D:A06	M00001567D:B03
	M00001485B:D10	M00001579C:H06
	M00001511A:A02	M00001585B:F01
	M00004249D:B08	M00001579B:F04
	M00004185D:E04	M00001579A:E03
	M00004188D:G08	M00001578C:F05
	M00004197C:F03	M00001577D:H06
	M00004198B:D02	M00001577B:F10
	M00004204D:C03	M00001576C:G05
	M00004208B:F05	M00001575D:D12
	M00004208D:B10	M00001575D:B10
	M00004210B:B05	M00001575D:A02
	M00001362D:H01	M00001573B:G08
	M00004216D:D03	M00001573A:E01
	M00004167A:H03	M00001572A:B05
	M00004275A:B03	M00001571D:F05
	M00004285C:A08	M00001579D:F04
	M00004316A:G09	M00001636A:F08
	M00004465B:D04	M00001643B:E05
	M00004493B:D09	M00001642C:G02
	M00001347B:H04	M00001642A:F03
	M00001351C:B06	M00001641D:C04
	M00001360A:G10	M00001641C:H07
	M00004216D:C03	M00001641C:F01
	M00004076D:D04	M00001641C:D02
	M00001484C:A04	M00001641B:F12
	M00001456B:G01	M00001634A:B04
	M00003972D:C09	M00001636B:G11
	M00003974C:E04	M00001649C:D05
	M00003979A:E11	M00001636A:C03
	M00003983C:F03	M00001635D:D05
	M00003989B:F11	M00001635D:C12
	M00004031D:B05	M00001635B:H02
	M00004177C:A01	M00001635B:H01

cDNA Ref No.; ATCC Accession No.	cDNA Library Ref ES29 ATCC No. 207076	cDNA Library Ref ES30 ATCC No. 207077
	M00004076B:G03	M00001634D:G11
	M00004167D:A07	M00001634D:D04
	M00004078A:A06	M00001634A:H05
	M00004085A:B02	M00001641A:A11
	M00004107B:A06	M00001638B:E12
	M00004111C:E11	M00001640A:H02
	M00004130D:H01	M00001614C:E06
	M00004157D:B03	M00001636D:F09
	M00004159C:F09	M00001637A:A03
	M00004162C:A07	M00001637A:A06
	M00004135B:G01	M00001637A:E10
	M00004040A:G12	M00001637A:F10
	M00001453B:H12	M00001637C:C06
	M00001448A:E11	M00001644A:H01
	M00001448B:F09	M00001638B:E03
	M00001448B:H05	M00001649A:E11
	M00001448C:E11	M00001638B:F10
	M00001448C:F10	M00001639A:C03
	M00001448D:F12	M00001639A:G07
	M00001449B:B03	M00001639B:H01
	M00001449C:C05	M00001639B:H05
	M00001449D:G10	M00001639C:A09
	M00001448A:B12	M00001639C:C02
	M00001453A:D08	M00001649C:E11
	M00001451B:A04	M00001649C:H10
	M00001454A:F11	M00001637C:E03
	M00001454A:G03	M00001617A:A08
	M00001455A:F04	M00001622A:H12
	M00001455B:E07	M00001621C:H12
	M00001455D:A06	M00001621B:G05
	M00001364B:B06	M00001620D:H02
	M00004117A:G01	M00001620D:G11
	M00001455D:D11	M00001619D:D10
	M00001456B:A06	M00001619C:C07
	M00001451A:C10	M00001619A:E05
	M00001395A:E03	M00001623A:F04
	M00001366D:C06	M00001618A:A03
	M00001365A:H10	M00001618B:D09
	M00001366D:C12	M00001617A:A01
	M00001373D:B03	M00001616D:C11
	M00001453B:F08	M00001615C:G05
	M00001444D:C01	M00001615C:A11
	M00001375B:C06	M00001615B:G07
	M00001392C:D05	M00001633D:H06
	M00001395A:A12	M00001639C:A10
	M00001395A:H02	M00001615B:A09

cDNA Ref No.; ATCC Accession No.	cDNA Library Ref ES29 ATCC No. 207076	cDNA Library Ref ES30 ATCC No. 207077
	M00001397D:G08	M00001615B:G01
	M00001434A:B10	M00001618A:F10
	M00001416A:D09	M00001632C:H07
	M00001433C:F10	M00001633D:D12
	M00001416A:H02	M00001633D:D09
	M00001428D:B10	M00001618A:F08
	M00001428B:D01	M00001633D:G09
	M00001426D:D12	M00001624A:A03
	M00001400C:D02	M00001633C:F09
	M00001427C:D01	M00001633C:H05
		M00001633C:B09
		M00001633A:E06
		M00001633C:H11
		M00001632C:B10
		M00001625D:G10
		M00001631D:G05
		M00001629C:E07
		M00001629B:B08
		M00001626C:E04
		M00001626C:C11
		M00001632A:B10
		M00001624B:B10
		M00001633C:A05
		M00001625C:G05

Table 24. Clones Deposited on January 22, 1999

cDNA Ref No.; ATCC Accession No.	cDNA Library Ref ES31 ATCC No. 207078	cDNA Ref No. ES32 ATCC No. 207079	cDNA Library Ref ES33 ATCC No. 207080
Clone Names in Library	M00003843A:E04 M00003842C:G03 M00003842A:A03 M00003841D:A04 M00003841B:E06 M00003841C:H11 M00003844A:A11 M00003841C:F01 M00003841C:H08 M00003841C:D07 M00003844D:A07 M00003845D:G08 M00003852C:B06 M00003854B:A07 M00003854B:D04 M00003859D:C05 M00003860B:F11 M00003867B:G07 M00003867B:G08 M00003841B:E03 M00003822D:B10 M00003867D:A06 M00003868B:G06 M00003867B:D10 M00003831C:G05 M00003901C:B01 M00003868C:C07 M00003820A:A08 M00003820B:D07 M00003820B:D10 M00003822D:C06 M00003823B:F07 M00003824C:D07 M00003825B:B10 M00003825B:B11 M00003828A:D05 M00003822D:D04 M00003830C:A03 M00003840D:H10 M00003832A:A09 M00003833B:B03 M00003833B:C12 M00003834B:G04 M00003835A:A09 M00003835B:H11 M00003835D:G06 M00003837C:E05 M00003837C:F10	M00003906A:F12 M00003906B:H06 M00003906C:C05 M00003907A:F01 M00003907B:C03 M00003907B:D05 M00003918A:D08 M00003918A:F09 M00003918C:H10 M00003924A:D08 M00003958B:E11 M00003958B:H08 M00003960A:G07 M00003971B:A10 M00003972D:H02 M00003973C:C03 M00003974B:B11 M00003974D:F02 M00003974D:H04 M00003975C:F07 M00003977C:A06 M00003977C:B03 M00003977D:A03 M00003977D:A06 M00003977D:D04 M00003978D:G04 M00003980A:F04 M00003980B:C11 M00003981C:B04 M00003982A:B12 M00003982C:G04 M00003984D:B08 M00003985B:G04 M00003985D:E10 M00003986B:A08 M00003986C:D09 M00003986D:C08 M00003987B:E12 M00003987B:F08 M00003987C:G03 M00003988D:A08 M00003989C:D03 M00003989C:G05 M00003989D:F12 M00004029B:F01 M00004029C:C05 M00004029C:G10 M00004030D:F11	M00005254D:A10 M00005260B:E11 M00005260A:F04 M00005260A:A12 M00005259B:D12 M00005257D:H11 M00005257D:G07 M00005257D:A06 M00005257C:G01 M00005257A:H11 M00005236B:H10 M00005236B:G03 M00005257C:E05 M00001608C:D02 M00001608C:G04 M00001608D:F11 M00001609C:A12 M00001609C:G05 M00001610C:B07 M00001612D:D12 M00001612D:F06 M00001613A:D02 M00001614A:B10 M00001614C:G07 M00001615C:E07 M00001625C:F10 M00001626D:A02 M00001629A:H09 M00001629D:B10 M00001629D:D10 M00001630C:F09 M00001631A:D03 M00001631A:F06 M00001631A:F12 M00001631B:H04 M00001633A:F11 M00001633A:G10 M00001633B:A12 M00001633B:E03 M00001633C:A08 M00001633C:E12 M00001635B:B02 M00001636A:H12 M00001638A:C08 M00001638B:C08 M00001639D:C12 M00001640A:F05 M00001642D:G08

cDNA Ref No.; ATCC Accession No.	cDNA Library Ref ES31 ATCC No. 207078	cDNA Ref No. ES32 ATCC No. 207079	cDNA Library Ref ES33 ATCC No. 207080
	M00003839A:D07	M00004034A:A01	M00001647D:G07
	M00003839D:E11	M00004034C:G02	M00001649A:E10
	M00003829C:H05	M00004034D:E09	M00001650D:D10
	M00003901B:C03	M00004035B:H09	M00001650D:F11
	M00003878C:F06	M00004036D:B04	M00001651C:D11
	M00003878C:G08	M00004036D:B09	M00001651C:G12
	M00003879A:A02	M00004038A:F02	M00001652B:D06
	M00003879A:B08	M00004038D:G06	M00001652D:G02
	M00003879A:C11	M00004039A:C03	M00001652D:G06
	M00003879A:D02	M00004039A:H11	M00001653A:A05
	M00003879B:G02	M00004039B:A05	M00001653D:H07
	M00003880B:D11	M00004039B:E12	M00001654A:E08
	M00003880C:E11	M00004040C:A01	M00001654B:A01
	M00003880C:H03	M00004051D:E01	M00001654C:D10
	M00003901B:F10	M00004072D:F09	M00001654C:G07
	M00003890B:C08	M00004073A:D10	M00001654C:G09
	M00003877C:A11	M00004075B:G09	M00001655C:C07
	M00003819D:B01	M00004076A:D12	M00001655D:E08
	M00003901B:G11	M00004076D:H07	M00001655D:H11
	M00001692A:G06	M00004078A:C11	M00001656A:H12
	M00003903C:C05	M00004078A:E05	M00001656C:C04
	M00003903C:E12	M00004078A:F07	M00001656D:C04
	M00003903D:C12	M00004078B:C11	M00001657C:C11
	M00003903D:D10	M00004078B:F12	M00001657D:A10
	M00003903D:H11	M00004079D:G08	M00001659D:A09
	M00003904A:C04	M00004081A:E02	M00001661D:D05
	M00003904B:C03	M00004081A:G01	M00001664B:E08
	M00003904C:A08	M00004081C:A10	M00001664B:F06
	M00003881B:F10	M00004083A:E08	M00001669B:C12
	M00003871D:G06	M00004083B:C01	M00001669C:B09
	M00003868D:D09	M00004086D:G08	M00001670A:F09
	M00003868D:D11	M00004087B:A12	M00001678C:F09
	M00003870C:A01	M00004087C:A01	M00001693A:H06
	M00003870C:A10	M00004088C:F01	M00003805D:E06
	M00003870C:E10	M00004088D:A11	M00003806C:A06
	M00003871A:A02	M00004088D:B05	M00003809B:A03
	M00003871A:B09	M00004088D:B10	M00003810A:A02
	M00003871A:C11	M00004090B:B04	M00003810B:B11
	M00003871A:G09	M00004090B:H06	M00003810C:B06
	M00003871C:E04	M00004092B:E05	M00003810D:H09
	M00003871C:F12	M00004093C:C02	M00003811C:C02
	M00003878C:D08	M00004096D:H03	M00003813B:F02
	M00003871D:E11	M00004099D:F01	M00003813C:H08
	M00003877C:G12	M00004100B:C07	M00003813D:B12
	M00003875A:A07	M00004103B:E09	M00003813D:C02
	M00003875A:B01	M00004105C:B05	M00003813D:G06
	M00003875B:F12	M00004105C:C08	M00003814B:C01
	M00003875C:A01	M00004107A:A12	M00003817C:A10
	M00003875C:A09	M00004107B:D07	M00003817C:G06
	M00003875C:G02	M00004108B:B02	M00003817D:D12

cDNA Ref No.; ATCC Accession No.	cDNA Library Ref ES31 ATCC No. 207078	cDNA Ref No. ES32 ATCC No. 207079	cDNA Library Ref ES33 ATCC No. 207080
	M00003876B:C05	M00004108D:E07	M00003821A:H09
	M00003876C:D02	M00004108D:G04	M00003822B:G12
	M00003876C:F02	M00004110A:A10	M00003822C:A07
	M00003877B:H10	M00004110B:A07	M00003823C:B01
	M00003868D:B09	M00004118B:A03	M00003823C:C04
	M00003871D:A10	M00004118B:F01	M00003824A:G11
	M00001669D:D06	M00004118D:B05	M00003824B:C09
	M00001661A:B11	M00004119A:C09	M00003824C:A10
	M00001661B:F06	M00004136D:B02	M00003824D:D08
	M00001662A:C07	M00004137A:D06	M00003825B:F10
	M00001662A:G01	M00004139C:A12	M00003825D:F01
	M00001662B:F06	M00004149C:B02	M00003826C:F05
	M00001663C:F12	M00004159C:G12	M00003829A:B08
	M00001664A:F08	M00004169D:B11	M00003829C:E08
	M00001664D:F04	M00004187D:H06	M00003829D:D12
	M00001661A:E06	M00004228C:H03	M00003829D:F03
	M00001669A:B02	M00004244C:G07	M00003830D:B11
	M00001669B:B12	M00004358D:C02	M00003830D:H11
	M00001669C:C08	M00004690A:G08	M00003833D:H08
	M00001675A:G10	M00004891B:D01	M00003833D:H10
	M00001669D:C03	M00004891C:D04	M00003840A:C10
	M00001660B:E03	M00004895B:E12	M00003840B:F05
	M00001669D:F05	M00004895B:G04	M00003840C:C02
	M00001670B:G12	M00004895D:G07	M00003845C:D04
	M00001671A:A10	M00004898C:F03	M00003845D:A04
	M00001671B:G05	M00004899D:G06	M00003846B:C05
	M00001671C:C11	M00004959D:H12	M00003846C:F08
	M00001672D:E08	M00004960A:B08	M00003848B:E07
	M00001673A:G08	M00004960C:E10	M00003848D:G02
	M00001673B:B07	M00005100A:B02	M00003850C:G09
	M00001673B:F07	M00005100A:C01	M00003851A:A06
	M00001673D:D06	M00005101C:E12	M00003851B:D03
	M00001673D:F10	M00005102C:D03	M00003851B:E01
	M00001674A:G07	M00005134B:E08	M00003851C:F09
	M00001692D:B01	M00005139A:H03	M00003851D:H11
	M00001669C:D09	M00005140C:B10	M00003852B:G04
	M00001655C:E01	M00005140D:C06	M00003852C:F07
	M00001649D:A08	M00005178D:H04	M00003853B:C10
	M00001650A:C11	M00005210A:E06	M00003854C:C09
	M00001651A:H11	M00005212B:E01	M00003855A:A01
	M00001652A:A01	M00005212C:C03	M00003855A:F01
	M00001652B:G10	M00005212C:D02	M00003855B:B09
	M00001652D:E05	M00005212C:H02	M00003856A:G04
	M00001652D:E09	M00005212D:D09	M00003856B:A12
	M00001653B:C06	M00005212D:H01	M00003857A:E12
	M00001653B:G10	M00005216A:D09	M00003857A:H10
	M00001653C:D10	M00005216A:H01	M00003857C:E05
	M00001654D:A03	M00005217B:A06	M00003858B:G02
	M00001654D:E12	M00005218A:F09	M00003860D:E06
	M00001654D:F11	M00005228A:B03	M00003905C:F12

cDNA Ref No.; ATCC Accession No.	cDNA Library Ref ES31 ATCC No. 207078	cDNA Ref No. ES32 ATCC No. 207079	cDNA Library Ref ES33 ATCC No. 207080
	M00001660C:B06	M00005228C:C05	M00003911A:D12
	M00001658D:G12	M00005229B:G12	M00003966B:A04
	M00001675C:A04	M00005229B:H04	M00003966C:A12
	M00001660B:D03	M00005229B:H06	M00003966C:F03
	M00001660B:A09	M00005229D:H03	M00003973D:F08
	M00001659D:C09	M00005230B:H09	M00003974D:E01
	M00001659D:B05	M00005232A:H12	M00003974D:H07
	M00001654D:F12	M00005233B:D04	M00003976B:E06
	M00001659A:D12	M00005233D:H07	M00003976B:H07
	M00001655A:B11	M00005235B:F10	M00003978A:E01
	M00001658B:A07	M00005236A:E04	M00003978A:E09
	M00001658A:G09	M00005236A:G10	M00003978C:A12
	M00001657D:A04	M00005236B:A12	M00003980C:E12
	M00001657B:B04	M00001448B:A07	M00003980C:F12
	M00001656B:E01	M00001448B:G07	M00003981A:A07
	M00001660B:E04	M00001448D:E11	M00003981B:B12
	M00001659C:F10	M00001455A:D10	M00003982A:G03
	M00003808C:A05	M00001455A:E11	M00003982B:C10
	M00001694D:C12	M00001476D:F12	M00003982B:H10
	M00003746C:E02	M00001478A:F12	M00003983A:D02
	M00003779D:E08	M00001482C:F09	M00003983A:F06
	M00003792A:B10	M00001485C:D07	M00003983A:G02
	M00003793D:A11	M00001485C:G06	M00003983D:E08
	M00003794D:G03	M00001485D:A05	M00003983D:H02
	M00003797A:C11	M00001487C:A11	M00003985A:C01
	M00003797A:D06	M00001487C:G09	M00003986C:G11
	M00003797A:G03	M00001530A:B02	M00003986D:H12
	M00003800B:F03	M00001530A:H05	M00004027A:A08
	M00003805A:F02	M00001530D:A11	M00004028A:B10
	M00003806B:C09	M00001539B:B10	M00004028A:G03
	M00001674A:G11	M00001567A:C04	M00004029B:A01
	M00003806D:D11	M00001567A:C11	M00004029B:A06
	M00001693D:E08	M00001567C:B08	M00004029B:G10
	M00003808D:D08	M00001567C:E07	M00004029C:F02
	M00003809A:C01	M00001570C:B02	M00004029C:F05
	M00003809A:F01	M00001570D:E05	M00004030B:A12
	M00003809B:B02	M00001570D:E07	M00004030B:D08
	M00003809B:E10	M00001573B:A06	M00004030C:A08
	M00003813A:B02	M00001573B:H12	M00004030C:C02
	M00003813A:D08	M00001575A:D05	M00004034C:F05
	M00003813B:E09	M00001575B:C01	M00004035B:F05
	M00003814B:C12	M00001576C:H02	M00004036A:A11
	M00003814B:F12	M00001577A:A03	M00004037C:D04
	M00003815C:C06	M00001578B:A06	M00004038A:E05
	M00003815C:D12	M00001579D:F02	M00004038B:D01
	M00003817B:C04	M00001582C:C04	M00004039C:E02
	M00003806B:G05	M00001582C:G02	M00004039D:B10
	M00001679A:D10	M00001584A:A07	M00004040A:A07
	M00001675C:C03	M00001584D:B06	M00004040A:B04
	M00001675C:D12	M00001584D:C11	M00004040A:C08

cDNA Ref No.; ATCC Accession No.	cDNA Library Ref ES31 ATCC No. 207078	cDNA Ref No. ES32 ATCC No. 207079	cDNA Library Ref ES33 ATCC No. 207080
	M00001675D:E10	M00001585D:B12	M00004040B:C05
	M00001676B:B09	M00001586C:H07	M00004040B:F07
	M00001676B:E01	M00001589D:A01	M00004069A:E12
	M00001676C:A04	M00001590D:B04	M00004069C:C08
	M00001676C:E07	M00001592B:B02	M00004077A:G12
	M00001676D:A02	M00001592D:H02	M00004085B:G01
	M00001676D:B02	M00001594C:E05	M00004087A:B05
	M00001677A:G11	M00001594C:H03	M00004090D:F12
	M00001677B:A12	M00001594D:G11	M00004092C:D08
	M00001677B:B04	M00001595A:C07	M00004097C:E03
	M00001677D:B01	M00001595A:D12	M00004097C:H08
	M00001678D:B11	M00001595A:E07	M00004097D:B05
	M00001681C:A08	M00001595B:G07	
	M00003819B:G01	M00001595B:G10	
	M00001693C:E09	M00001595B:H11	
	M00001693C:C12	M00001595C:A01	
	M00001692B:E01	M00001595C:A05	
	M00001692A:B06	M00001595C:B12	
	M00001678B:H01	M00001595C:E05	
	M00001681D:C12	M00001595C:E09	
	M00001694A:E03	M00001595D:C11	
	M00001680B:D02	M00001596A:A02	
	M00001680A:B02	M00001596A:D01	
	M00001679D:F02	M00001596C:G05	
	M00001679D:B02	M00001607A:A01	
	M00001679A:G06		